



SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Cyclohexanone

Product Code **C10,218-0**

Store at Room Temperature

Replacement for Product Number C 8390

Product Description

Molecular Formula: $C_6H_{10}O$

Molecular Weight: 98.14

CAS Number: 108-94-1

Density: 0.9478 g/ml (25 °C)¹

Boiling point: 155 °C (760 torr)¹

Melting point: -32.1 °C¹

Synonyms: ketohexamethylene, pimelic ketone

Cyclohexanone is a solvent that is used in organic synthesis. It is obtained from cyclohexanol by catalytic dehydrogenation or by oxidation; the latter process gives adipic acid as an additional product. It may also be produced from cyclohexane by oxidation, which gives both cyclohexanone and cyclohexanol as products.¹

Notable uses of cyclohexanone include the production of adipic acid for nylon and of caprolactam.

Cyclohexanone is also a solvent for cellulose acetate, nitrocellulose, natural resins, vinyl resins, polyvinyl chloride and its copolymers, methacrylate ester polymers, waxes, and fats.¹

Cyclohexanone has been investigated in the potential use of ionic liquids in liquid membranes for the selective transport of organic molecules.² Studies of the nanocatalyst-mediated conversion of cyclohexanone to its oxime and caprolactam have been published.^{3,4}

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (0.1 ml/ml, 10% v/v), yielding a clear, colorless solution. Cyclohexanone is generally miscible with ether and other common organic solvents. This product is also soluble in water (87 mg/ml).¹

References

1. The Merck Index, 12th ed., Entry# 2795.
2. Branco, L. C., et al., Studies on the selective transport of organic compounds by using ionic liquids as novel supported liquid membranes. *Chemistry*, **8(17)**, 3865-3871 (2002).
3. Thomas, J. M., and Raja, R., Nanopore and nanoparticle catalysts. *Chem. Rec.*, **1(6)**, 448-466 (2001).
4. Raja, R., et al., Bifunctional molecular sieve catalysts for the benign ammoxidation of cyclohexanone: one-step, solvent-free production of oxime and ϵ -caprolactam with a mixture of air and ammonia. *J. Am. Chem. Soc.*, **123(33)**, 8153-8154 (2001).

GCY/NSB 5/06

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.